

**ABSTRACT**

The invention relates to a porous structure, characterized in that it comprises a porous matrix (15) made of carbon fabric, said porous matrix being bounded on at least one of its faces (17, 21) by an impermeable layer (19, 23) made of an element chosen from carbon fibres, carbon nanotubes and glassy carbon, said impermeable layer being linked to the porous matrix via carbon-carbon bonds.

The invention also relates to a process for manufacturing such porous structures.

Application to the fields of fuel cells and heat exchangers.

Figure 2.